

SERVICE MANUAL

INTEGRATED AMPLIFIER

SANSUI AU-G11X



CAUTION

1. Parts identified by the Δ symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

•SPECIFICATIONS

Power output

Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.008% total harmonic distortion.

25 watts per channel into 8 ohms.

Load impedance..... 8 ohms

Total harmonic distortion

..... less than 0.008% at or below rated min. RMS power output

Intermodulation distortion

(60 Hz: 7 kHz = 4:1 SMPTE method)

..... less than 0.008% at rated power output

Frequency response (at 1 watt)

Overall (from AUX, CD, TUNER, TAPE PLAY-1, 2)

..... 10 Hz to 180,000 Hz, +0 dB
-3.0 dB

RIAA curve deviation (PHONO, 20 Hz to 20 kHz)

..... +0.2 dB, -0.5 dB

Input sensitivity and impedance (at 1 kHz)

PHONO 2.5 mV/47 kohms

(Max. input capability; 150 mV at 1 kHz, less than 0.005% total harmonic distortion)

CD, AUX, TUNER..... 150 mV/47 kohms

TAPE PLAY-1, 2 150 mV/47 kohms

Signal to noise ratio (short-circuit, A-network)

PHONO 83 dB

CD, AUX, TUNER..... 100 dB

TAPE PLAY-1, 2 100 dB

Controls and Filter

BASS +8 dB, -8 dB at 50 Hz

TREBLE +8 dB, -8 dB at 10 kHz

LOUDNESS +9 dB at 50 Hz

+5 dB at 10 kHz
(VOLUME: -30 dB position)

Power requirements

Power voltage 120/220/240V (50/60 Hz)

For U.S.A. & Canada

..... 120V (60 Hz)

Power consumption.... 100 watts Rated

140 watts Maximum

Dimensions 430 mm (16-15/16") W

76 mm (3") H

277 mm (10-15/16") D

Weight 5.2 kg (11.7 lbs) net

6.0 kg (13.2 lbs) packed

* Design and specifications subject to changes without notice for improvements.

* Due to local laws and regulations, this unit sold in some areas are not equipped with variable voltage selectors.

Sansui

SANSUI ELECTRIC CO., LTD.

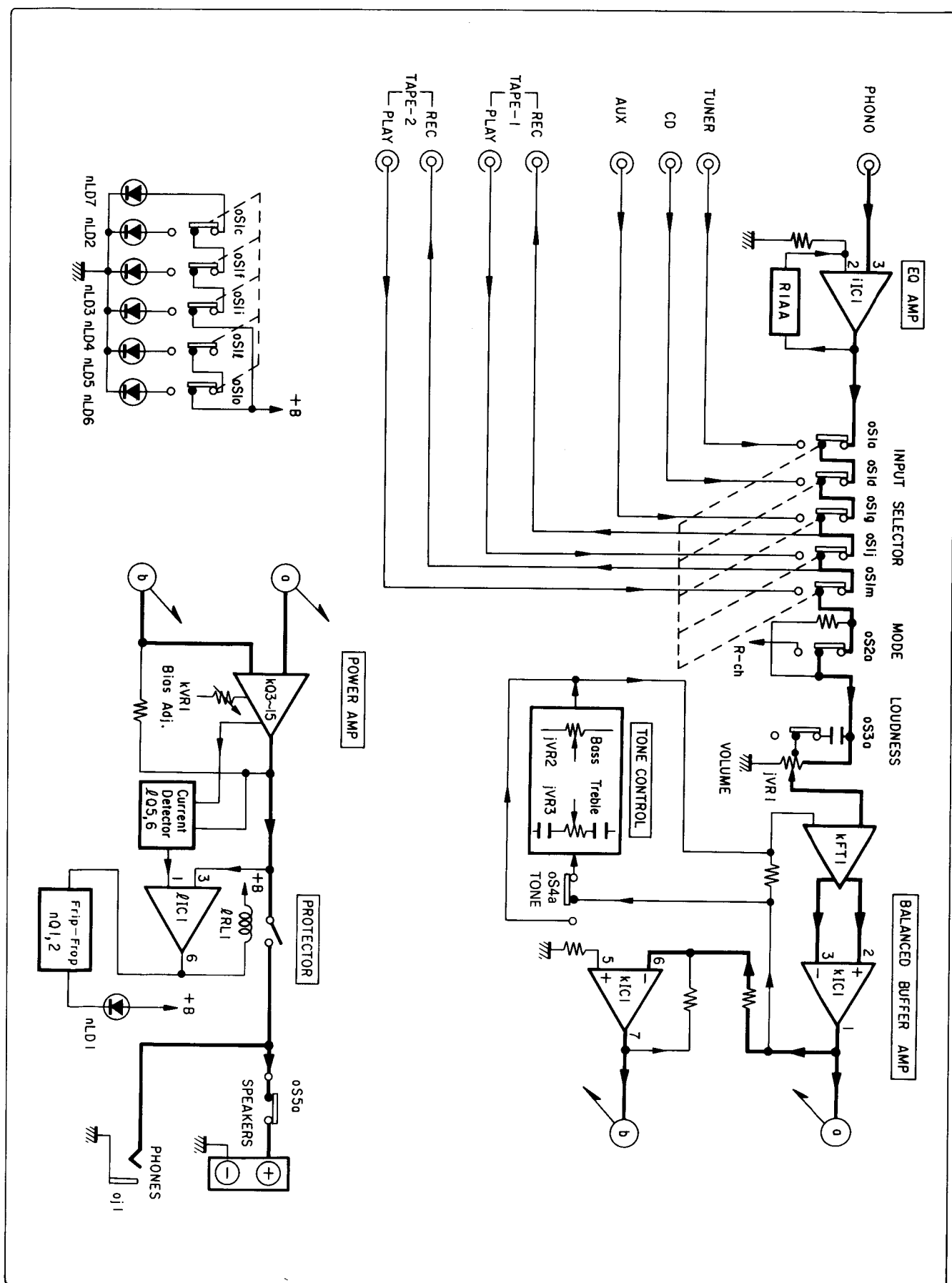
CAUTION

1. The symbols, UL, CSA, SA, BS, UK, EU, AS and XX (EXPORT) on the parts list and the schematic diagram mean followings respectively.
UL..... Manufactured for U.S.A market.
 (Underwriters Laboratories approved model.)
CSA Manufactured for Canadian market.
SA..... Manufactured for South African market.
BS, UK Manufactured for United Kingdom market.
EU Manufactured for European market.
AS..... Manufactured for Australian market.
XX (EXPORT) Standard Version.
NON MARK Common Parts.
2. Some printed circuit boards are not supplied as the assembled.
To separate these in this service manual, the stock No's are not indicated at the ends of the board names. However, the individual parts on the circuit boards are provided by orders.
3. Since some of capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors & resistors, which was issued on February 1983.
4. Abbreviations in this service manual are as follows.

•Abbreviations List

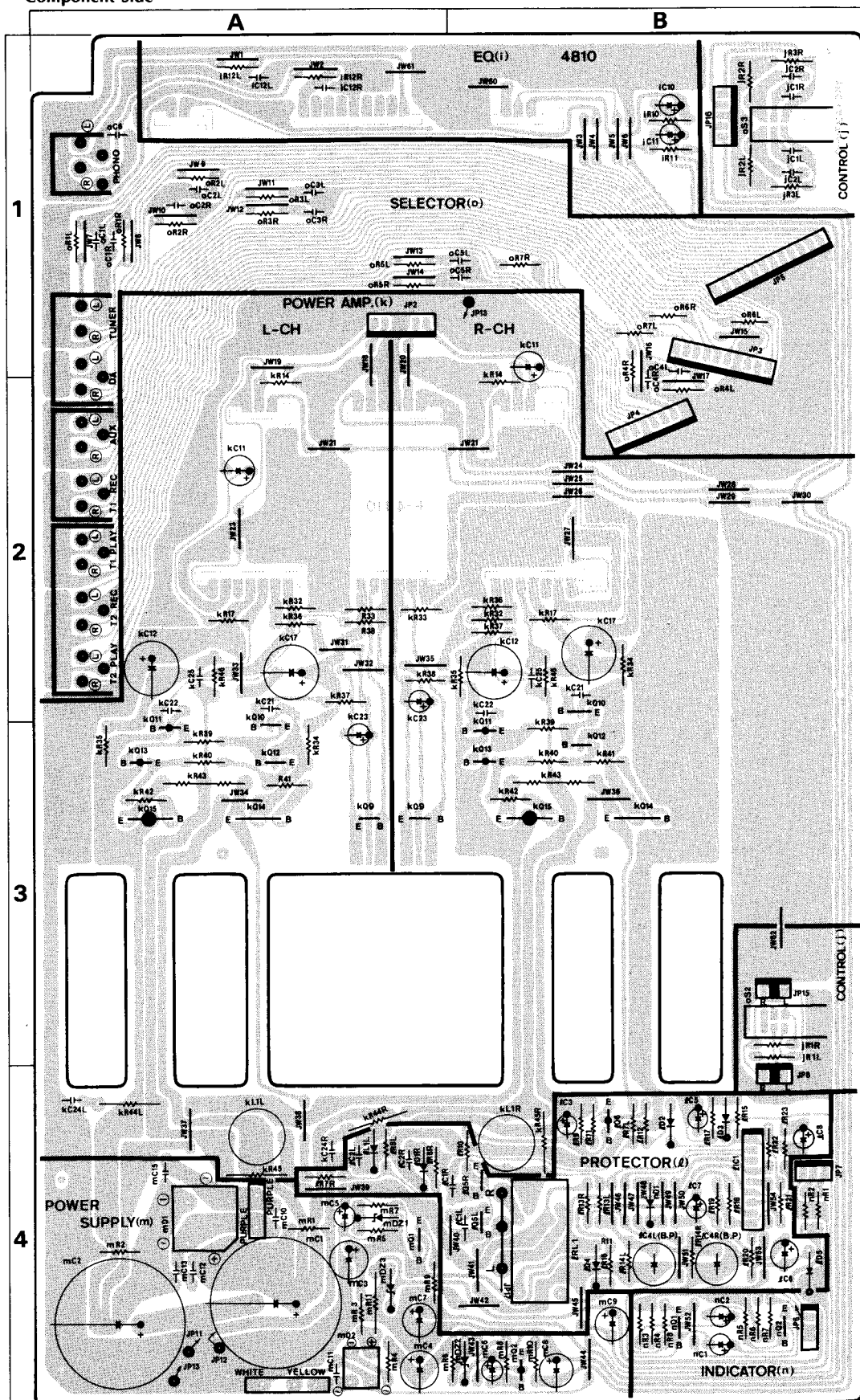
| | | | |
|--------|----------------------------|---------|-----------------------------|
| C.R. | : Carbon Resistor | E.B.L. | : Low Leak Bi-Polar |
| S.R. | : Solid Resistor | | Electrolytic Capacitor |
| Ce.R. | : Cement Resistor | Ta.C. | : Tantalum Capacitor |
| M.R. | : Metal Film Resistor | F.C. | : Film Capacitor |
| F.R. | : Fusing Resistor | M.P. | : Metalized Paper Capacitor |
| N.I.R. | : Non-Inflammable Resistor | P.C. | : Polystyrene Capacitor |
| A.R. | : Array Resistor | G.C. | : Gimmic Capacitor |
| C.C. | : Ceramic Capacitor | A.C. | : Array Capacitor |
| C.T. | : Ceramic Capacitor, | V.R. | : Variable Resistor |
| | Temperature Compensation | S.V.R. | : Semi Variable Resistor |
| E.C. | : Electrolytic Capacitor | SW. | : Switch |
| E.L. | : Low Leak Electrolytic | Chip R. | : Chip Resistor |
| | Capacitor | Chip C. | : Chip Capacitor |
| E.B. | : Bi-Polar Electrolytic | | |
| | Capacitor | | |

1. BLOCK DIAGRAM



2. PARTS LOCATION & PARTS LIST

2-1. F-4810 Power Amp. & Power Supply Board (Stock No. 00845501)



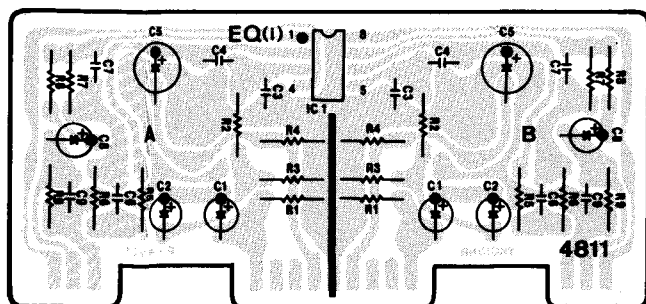
Parts List < F-4810 >

| Parts No. | Stock No. | Description |
|-------------|-------------------------|-----------------------------------|
| △IR10 | 46227800 | 10Ω 1/2W N.I.R. |
| △IR11 | 46227800 | 10Ω 1/2W N.I.R. |
| jC1 | 46696000 | 0.022μF 50V F.C. |
| •Transistor | | |
| △kQ9 | 03067401 | 2SC1845 |
| kQ10 | 48061801 | 2SC3244 |
| kQ11 | 48064001 | 2SA1284 |
| kQ12 | 07206401 | 2SD600K |
| kQ13 | 07206301 | 2SB631K |
| △kQ14 | 03068701 | 2SC2577 |
| △kQ15 | 03011801 | 2SA1102 |
| △kR34 | 46228600 | 47Ω 1/2W N.I.R. |
| △kR35 | 46228600 | 47Ω 1/2W N.I.R. |
| △kR39 | 46230300 | 1.2kΩ 1/2W N.I.R. |
| △kR40 | 46229100 | 120Ω 1/2W N.I.R. |
| △kR41 | 46227400 | 4.7Ω 1/2W N.I.R. |
| △kR42 | 46227400 | 4.7Ω 1/2W N.I.R. |
| △kR43 | 46644300 | 0.22Ω × 2 3W Ce.R. |
| △kR44 | 46247700 | 4.7Ω 1W N.I.R. |
| △kR45 | 46247300 | 2.2Ω 1W N.I.R. |
| kC24 | 46697600 | 0.1μF 50V F.C. |
| kL1 | 46851900 or 46851901 | 0.8μH Inductor 0.82μH Inductor |
| •Transistor | | |
| IQ5 | 46581701 | 2SC1845 |
| IQ6 | 46581601 | 2SA992 |
| •IC | | |
| IIC1 | 46207600 | TA7317P |
| •Diode | | |
| ID1 | 03117600 or 46086000 | 1S2473T77 1S1588TP-3 |
| ID2 | 03117600 or 46086000 | 1S2473T77 1S1588TP-3 |
| ID3 | 03117600 or 46086000 | 1S2473T77 1S1588TP-3 |
| ID4 | 03117700 | 10E-2 |
| ID5 | 03111600 or 03111800 | 1S2473 1S1588 |
| IC1 | 46283300 | 0.022μF 50V F.C. |
| IC4 | 08460200 | 220μF 6.3V E.B. |
| IRL1 | 46254900 | Relay, Protector |

| Parts No. | Stock No. | Description |
|--------------|--|---|
| •Transistor | | |
| △mQ1 | 48061801 | 2SC3244 |
| △mQ2 | 48064001 | 2SA1284 |
| •Diode | | |
| △mD1 | 46194700 | RB402-LFF |
| △mD2 | 46273600 | DBB10-B |
| •Zener Diode | | |
| mDZ1 | 46115400 or 46115500 | 05Z20-Y 05Z20-Z |
| mDZ2 | 46115400 or 46115500 | 05Z20-Y 05Z20-Z |
| mDZ3 | 46113700 or 46113800 | 05Z11-Z 05Z12-X |
| △mR3 | 46228600 | 47Ω 1/2W N.I.R. |
| △mR4 | 46228600 | 47Ω 1/2W N.I.R. |
| △mR9 | 46228800 | 68Ω 1/2W N.I.R. |
| △mR10 | 46228800 | 68Ω 1/2W N.I.R. |
| △mR11 | 46624900 | 330Ω 2W N.I.R. |
| mC1 | 46606500 | 4700μF 50V E.C. |
| mC2 | 46606500 | 4700μF 50V E.C. |
| mC10 | 08680400 | 0.01μF 500V C.C. |
| mC11 | 08680400 | 0.01μF 500V C.C. |
| •Transistor | | |
| nQ1 | 46367101 or 46367301 or 46391901 | 2SC2603 2SC2458 2SC2785 |
| nQ2 | 46367101 or 46367301 or 46391901 | 2SC2603 2SC2458 2SC2785 |
| •Diode | | |
| nD1 | 03117600 or 46086000 | 1S2473T77 1S1588TP-3 |
| oS2 | 46361000 | Push SW., MODE |
| oS3 | 46361000 | Push SW., LOUDNESS |
| oZ1 | 46438100 | 2P Terminal Board, PHONO |
| oZ2 | 46363800 | 4P Terminal Board, TUNER, DA |
| oZ3 | 46363800 | 4P Terminal Board, AUX, REC-1 |
| oZ4 | 46363900 | 6P Terminal Board, PLAY-1, PLAY-2, REC-2 |

2-2. F-4811 Equalizer Amp. Board (Stock No. 00845601)

Component Side

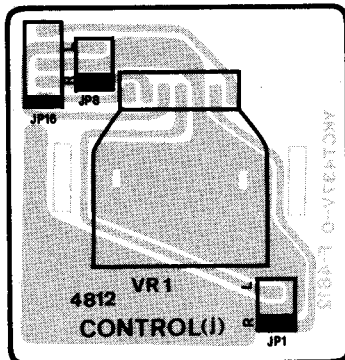


Parts List

| Parts No. | Stock No. | Description |
|-----------|-----------|------------------|
| •IC | | |
| iIC1 | 46638700 | M5220P |
| iC3 | 46654000 | 220pF 100V F.C. |
| iC4 | 46653200 | 100pF 100V F.C. |
| iC6 | 46697000 | 0.056μF 50V F.C. |
| iC7 | 46695700 | 0.016μF 50V F.C. |
| iC9 | 46282400 | 3300pF 50V F.C. |
| iC13 | 46703300 | 0.1μF 50V F.C. |

2-3. F-4812 VOLUME Control Board

Component Side

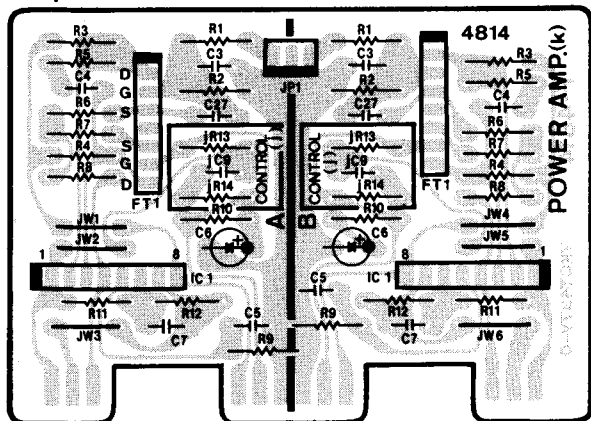


Parts List

| Parts No. | Stock No. | Description |
|-----------|-----------|---------------------------------------|
| jVR1 | 46555900 | 150k Ω \times 2 V.R., VOLUME |

2-4. F-4814 Balanced Buffer Amp. Board (Stock No. 00845901)

Component Side

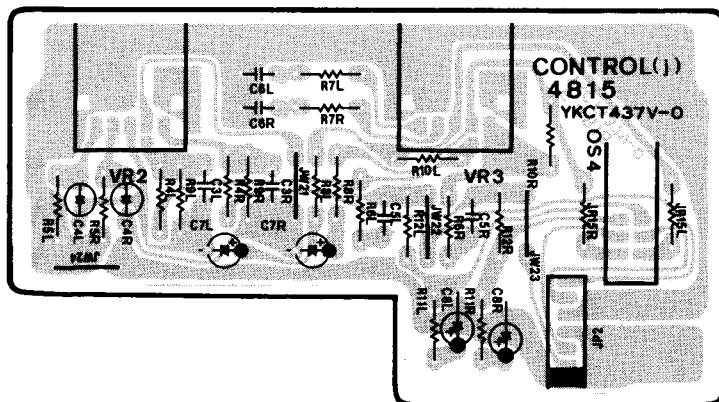


Parts List

| Parts No. | Stock No. | Description |
|-----------|-------------------------|--------------------------------|
| •FET | | |
| kFT1 | 07110000 or 07110001 | μ PA68H-L μ PA68H-M |
| •IC | | |
| kIC1 | 46288800 | M5220L |
| kC3 | 46653200 | 100pF 100V F.C. |
| kC4 | 46655200 | 680pF 100V F.C. |
| kC5 | 46283300 | 0.022 μ F 50V F.C. |

2-5. F-4815 Tone Control Board

Component Side



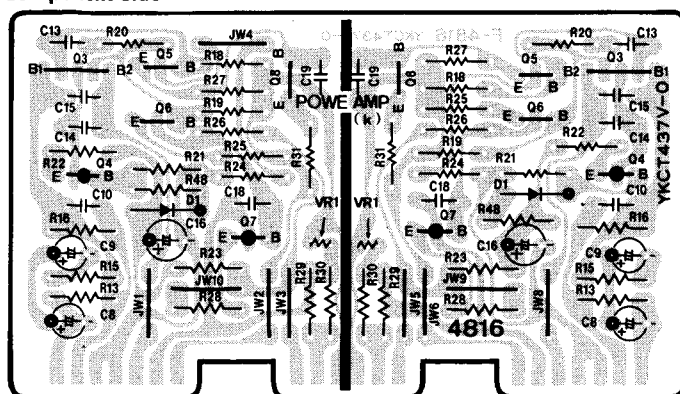
Parts List

| Parts No. | Stock No. | Description |
|-----------|-----------|------------------------|
| jC3 | 46697300 | 0.075 μ F 50V F.C. |
| jC4 | 46936900 | 0.15 μ F 50V F.C. |
| jC5 | 46695500 | 0.013 μ F 50V F.C. |
| jC6 | 46283500 | 0.033 μ F 50V F.C. |
| jC7 | 08452000 | 4.7 μ F 50V E.B. |

| Parts No. | Stock No. | Description |
|-----------|-----------|---|
| jVR2 | 48149400 | 50k Ω (C) \times 2 V.R., BA SS |
| jVR3 | 48149400 | 50k Ω (C) \times 2 V.R., TR EBLE |
| oS4 | 46365500 | Push SW., TONE |

2-6. F-4816 Driver Amp. Board (Stock No. 00846101)

Component Side



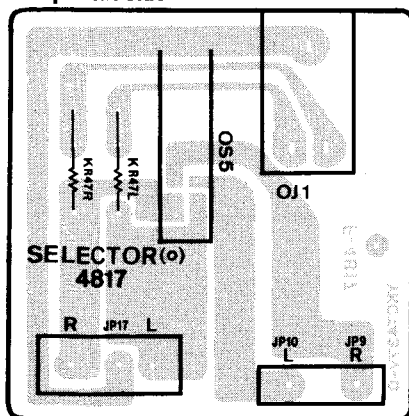
Parts List

| Parts No. | Stock No. | Description |
|--------------|-------------|-------------|
| • Transistor | | |
| kQ3 | 03602901 | 2SA798 |
| kQ4 | 46392001 | 2SA1175 |
| kQ5 | 07208701 | 2SC2705 |
| kQ6 | 07208701 | 2SC2705 |
| kQ7 | 46728201 | 2SA1145 |
| | or 48112901 | 2SA949 |
| kQ8 | 46728301 | 2SC2705 |
| | or 48113001 | 2SC2229 |

| Parts No. | Stock No. | Description |
|-----------|-------------|---------------------------|
| • Diode | | |
| kD1 | 03117600 | 1S2473T77 |
| | or 46086000 | 1S1588TP-3 |
| Δ kR25 | 46229800 | 470Ω 1/2W N.I.R. |
| Δ kR26 | 46229800 | 470Ω 1/2W N.I.R. |
| Δ kR27 | 46229800 | 470Ω 1/2W N.I.R. |
| Δ kR28 | 46228700 | 56Ω 1/2W N.I.R. |
| Δ kR31 | 46228700 | 56Ω 1/2W N.I.R. |
| kVR1 | 46840500 | 470Ω(B) S.V.R., Bias Adj. |

2-7. F-4817 SPEAKERS SW. & PHONES Jack Board

Component Side

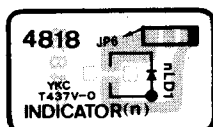


Parts List

| Parts No. | Stock No. | Description |
|-----------|-----------|--------------------|
| Δ kR47 | 46229400 | 220Ω 1/2W N.I.R. |
| oS5 | 48156600 | Push SW., SPEAKERS |
| oJ1 | 46579600 | Jack, PHONES |

2-8. F-4818 POWER/PROTECTOR Indicator Board

Component Side

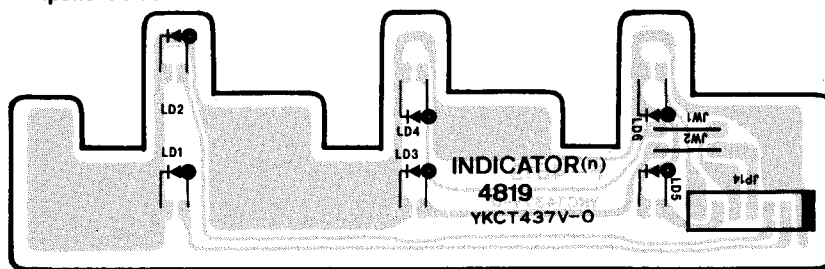


Parts List

| Parts No. | Stock No. | Description |
|-----------|-----------|-------------------------|
| nLD1 | 46169300 | LED SEL1210S, Protector |

2-9. F-4819 Input Indicator Board

Component Side

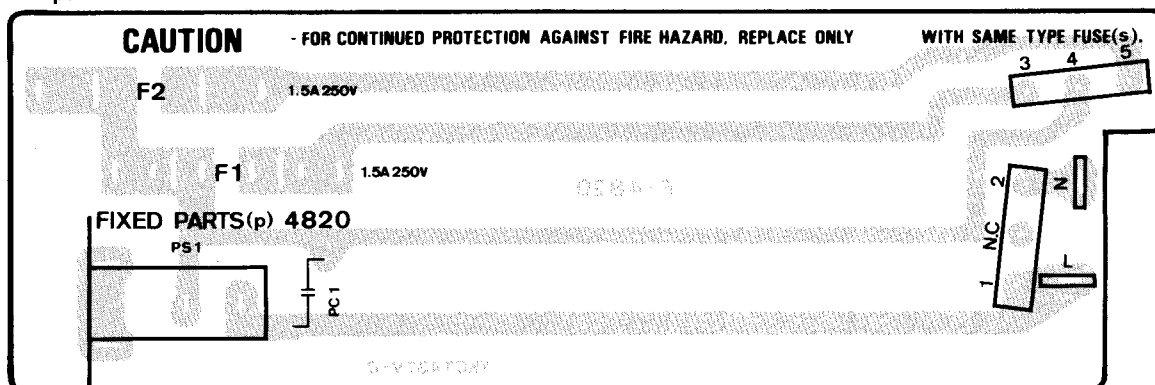


Parts List

| Parts No. | Stock No. | Description |
|-----------|-----------|------------------|
| •LED | | |
| nLD2 | 48076100 | SEL2413E, TUNER |
| nLD3 | 48076100 | SEL2413E, CD |
| nLD4 | 48076100 | SEL2413E, AUX |
| nLD5 | 48076100 | SEL2413E, TAPE-1 |
| nLD6 | 48076100 | SEL2413E, TAPE-2 |
| nLD7 | 48076100 | SEL2413E, PHONO |

2-10. F-4820 POWER SW. Board

Component Side

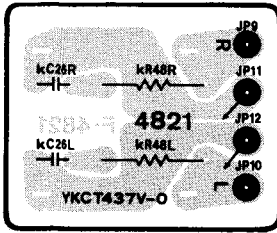


Parts List

| Parts No. | Stock No. | Description |
|-----------|-----------|-------------------------------|
| △pC1 | 46425800 | 0.01μF 400V C.C. |
| △pF1 | 07188500 | 1.5A 250V Fuse (XX) |
| △ | 07188800 | 3A 250V Fuse (UL,CSA) |
| △ | 07184800 | 1.25A 250V Fuse (EU,BS) |
| △pF2 | 07188500 | 1.5A 250V Fuse (XX 120V) |
| △pS1 | 46360300 | Push SW., POWER (XX,UL,EU,BS) |
| △ | 48064900 | Push SW., POWER (CSA) |
| △pZ1 | 38005700 | Power Supply Cord (XX,UL) |
| △ | 48188000 | Power Supply Cord (CSA) |
| △ | 38004500 | Power Supply Cord (EU) |
| △ | 38004300 | Power Supply Cord (BS) |

2-11. F-4821 SPEAKERS Terminal Board

Component Side

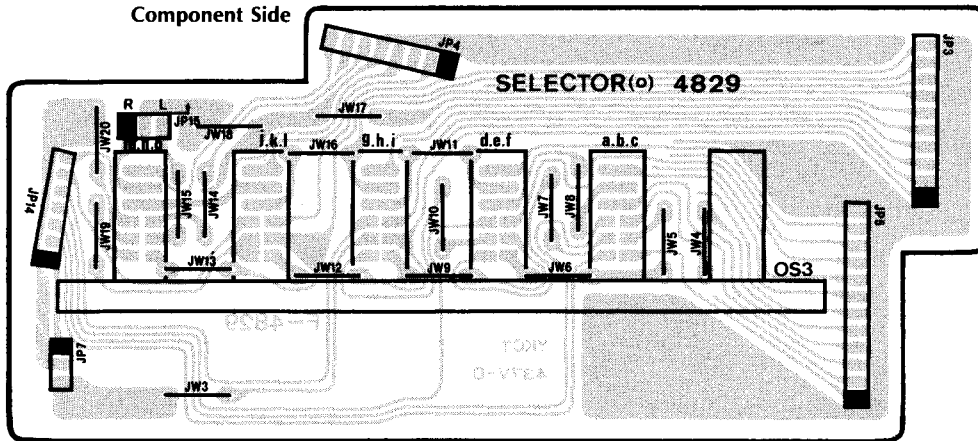


Parts List

| Parts No. | Stock No. | Description |
|-----------|-----------|-----------------------------|
| oZ6 | 48148900 | 4P Terminal Board, SPEAKERS |

2-12. F-4829 INPUT SELECTOR SW. Board

Component Side

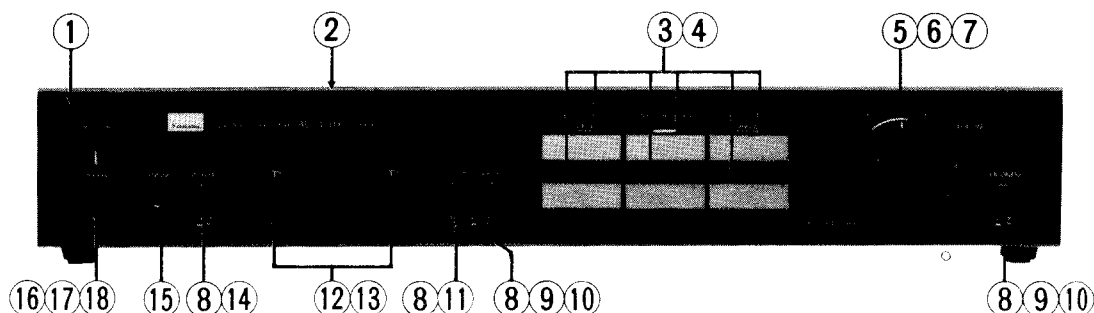


Parts List

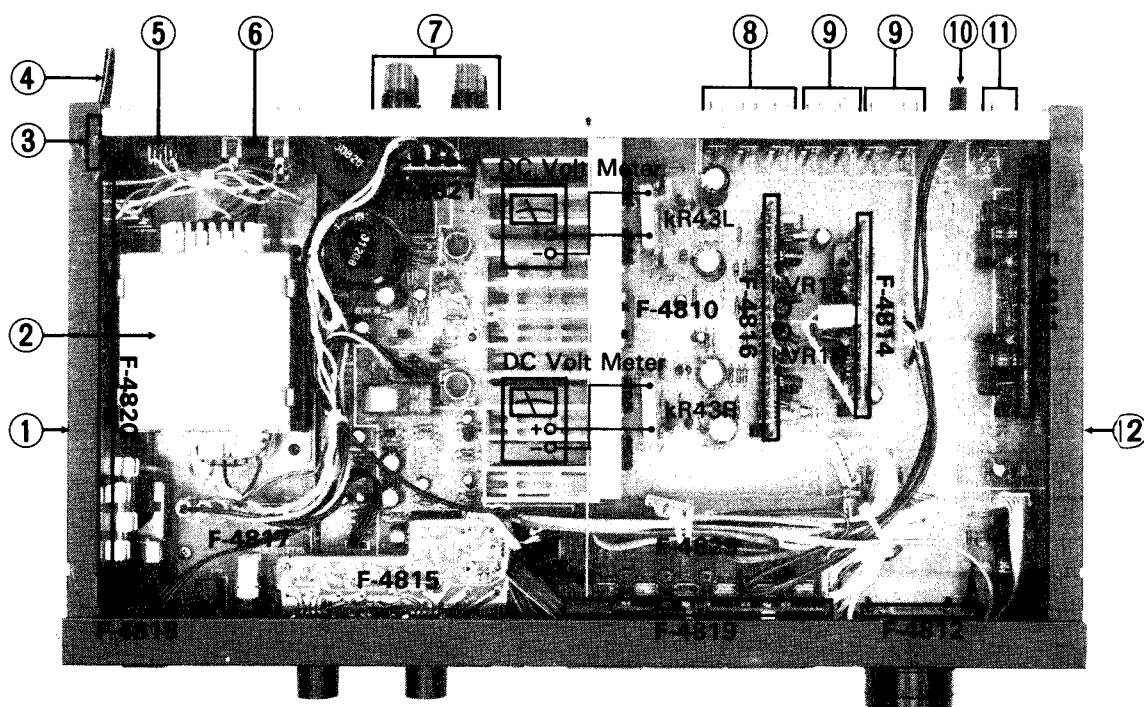
| Parts No. | Stock No. | Description |
|-----------|-----------|--------------------------|
| oS1 | 48149300 | Push SW., INPUT SELECTOR |

3. OTHER PARTS

3-1. Front View



3-2. Top View



Parts List <Front View>

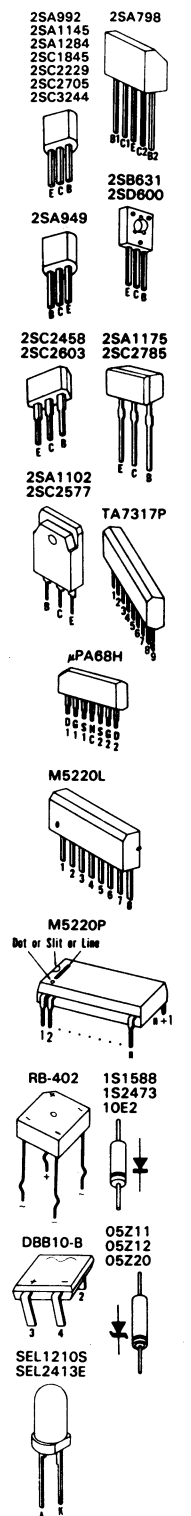
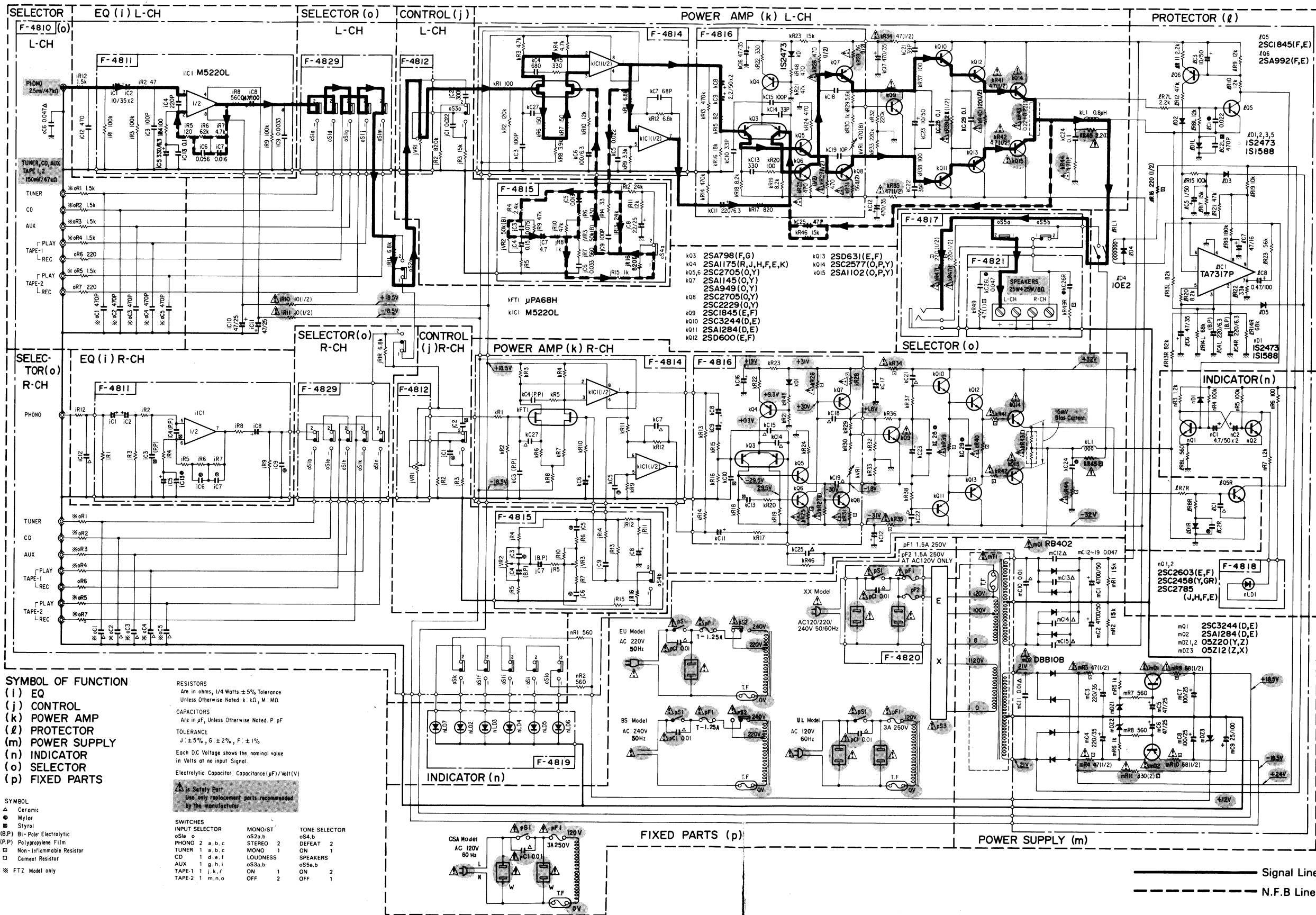
| Parts No. | Stock No. | Description |
|-----------|-----------|--------------------------------------|
| 1 | 47707300 | Front Panel Ass'y |
| 2 | 47708300 | Bonnet |
| 3 | 48149300 | Push SW., INPUT SELECTOR |
| 4 | 47637400 | Joint Shaft 2 |
| 5 | 47706910 | Knob, VOLUME (Left) |
| 6 | 47707000 | Knob, VOLUME (Right) |
| 7 | 46555900 | 150kΩ x 2 V.R., VOLUME |
| 8 | 47636300 | Knob, LOUDNESS, MODE, TONE, SPEAKERS |
| 9 | 47149200 | Joint Shaft, LOUDNESS, MODE |
| 10 | 46361000 | Push SW., LOUDNESS, MODE |
| 11 | 46365500 | Push SW., TONE |
| 12 | 47658500 | Knob, BASS, TREBLE |
| 13 | 48149400 | 50kΩ(C) x 2 V.R., BASS, TREBLE |
| 14 | 48156600 | Push SW., SPEAKERS |
| 15 | 46579600 | Jack, PHONES |
| 16 | 47633700 | Knob, POWER |
| 17 | 47637300 | Joint Shaft 1, POWER |
| △ 18 | 46360300 | Push SW., POWER (XX,UL,EU,BS) |
| △ | 48064900 | Push SW., POWER (CSA) |

Parts List <Top View>

| Parts No. | Stock No. | Description |
|-----------|-----------|--|
| 1 | 47315610 | Side Panel Ass'y (L) |
| △ 2 | 15018901 | Power Transformer (XX) |
| △ | 15018902 | Power Transformer (UL,CSA) |
| △ | 15018905 | Power Transformer (EU,BS) |
| 3 | 47157300 | AC Cord Cover |
| △ 4 | 46407700 | Power Supply Cord (XX,UL,CSA) |
| △ | 38004500 | Power Supply Cord (EU) |
| △ | 38004300 | Power Supply Cord (BS) |
| △ 5 | 48062100 | Slide SW., VOLTAGE SELECTOR (XX) |
| △ | 46739400 | Slide SW., VOLTAGE SELECTOR (EU,BS) |
| △ 6 | 48076600 | AC Outlet (XX,UL,CSA) |
| △ | 46161000 | AC Outlet (EU) |
| 7 | 48148900 | 4P Terminal, SPEAKERS |
| 8 | 46363900 | 6P Terminal Board, PLAY-1, PLAY-2, REC-2 |
| 9 | 46363800 | 4P Terminal Board, REC-1, AUX CD, TUNER |
| 10 | 22301510 | Ground Terminal |
| 11 | 46438100 | 2P Terminal Board, PHONO |
| 12 | 47314820 | Side Panel Ass'y (R) |

4. SCHEMATIC DIAGRAM

Design and specifications subject to change without notice for improvement.
La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



1
2
3
4
5

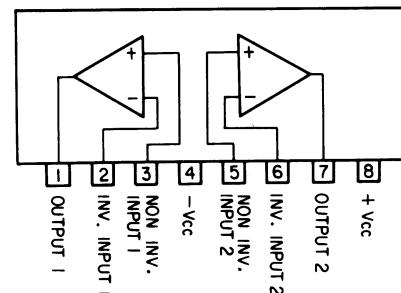
5. ADJUSTMENT (See Top View on page 9)

- Note:** 1) Master Volume Minimum
 2) Room Temperature 18°C~28°C (65°F~83°F)
 3) For this adjustment, run the unit for more than 5 minutes after the power is switched ON.
 4) Before turning ON power switch, set kVR1 on F-4810 to center position.

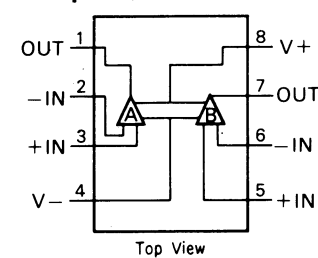
| STEP | SUBJECT | MEASURE OUTPUT | ADJUST | ADJUST FOR | REMARKS |
|------|------------------------|--|---------------------|---------------|---------|
| 1. | Bias Current Adj. L-CH | Between emitters of power transistors (kQ14 & kQ15) (Across kR43L) | kVR1, L-ch (F-4816) | DC 15mV ± 3mV | |
| 2. | Bias Current Adj. R-CH | Between emitters of power transistors (kQ14 & kQ15) (Across kR43R) | kVR1, R-ch (F-4816) | DC 15mV ± 3mV | |

6. INTERIOR BLOCK DIAGRAM OF IC

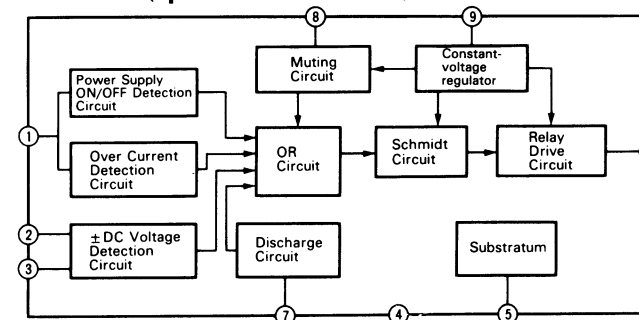
•M5220L (OP Amp. IC)



•M5220P (OP Amp. IC)

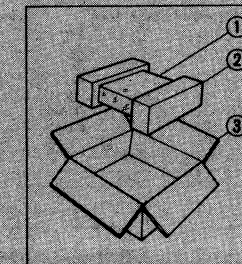


•TA7317P (Speaker Protector IC)



7. PACKING LIST

| Parts No. | Stock No. | Description |
|-----------|-----------|-------------------|
| 1 | 07599500 | Vinyl Cover |
| 2 | 07827220 | Styrofoam Packing |
| 3 | 47708800 | Carton Case |



8. ACCESSORY LIST

| Stock No. | Description |
|-----------|-----------------------|
| 46960900 | Operating Instruction |

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SANSUI ELECTRIC CO., LTD.:
 SANSUI ELECTRONICS CORPORATION:
 SANSUI ELECTRONICS (U.K.) LTD.:
 SANSUI ELECTRONICS G.M.B.H.:

14-1, Izumi 2-chome, Suginami-ku, Tokyo 168 Japan
 PHONE: (03) 324-8891/TELEX: 232-2076 (International Division)
 1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.
 17150 South Margay Ave. Carson, California 90746 U.S.A.
 3036 Koapaka Street, Honolulu, Hawaii 96819 U.S.A.
 Unit 10A, Lyon Industrial Estate, Rockware Avenue, Geesford, Middlesbrough, England
 Pau Ehrlich Strasse 8, 6074 Rödermark 2, West Germany

(SM1-209)

Printed in Japan (N40120M) <Stock No. 36499300>